

VoidDistances2020

Installation/Compilation

Compile vd2020 following:

```
cd EllipticIntegrals/src
make
```

```
cd ../../LLTBBackground/src
make lltpackage
```

```
cd ../../wLLTBBackground/source
make all
```

```
cd ../../src
make
```

```
cd ../wLLTBBackground/bin
```

Test using:

```
./vd2020 b 0.7 0.0245 0.1225 0.0 0.7 -1.0 -0.25 0.75 1065.
```

Usage

Binary `vd2020`, placed at `wLLTBBackground/bin/`, has two actions:

- `b` (basic/fastest computation, does not compute dipole needed to compute Y Compton & kSZ effects)
- `c` (complete/slowest computation, include dipole and should be used only if Y Compton & kSZ are needed) you should also pass `YHe z_reio` in the input line

The ‘`c`’ computation is significant slower than the ‘`b`’ action since it also offers the dipole as function of redshift including then computation of several non-trivial integrals at different redshift.

‘`b`’ action can be used by:

```
vd2020 b H0 om_b om_dm Om_k Om_DE w_DE delta0 z_Boundary z_drag
```

while ‘`c`’ action can be used through:

```
vd2020 b H0 om_b om_dm Om_k Om_DE w_DE delta0 z_Boundary z_drag YHe z_reio
```

For pedagogical purposes we have include a Jupyter notebook available in the folder `notebooks`.